

SAFETY DATA SHEET

M35886 - ANSI - EN



LIQUID SODIUM SILICATE - ALKALINE

SDS No.: M35886

SDS Revision Date: 18-Mar-2015

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 5005 LBJ Freeway P.O. Box 809050 Dallas, TX 75380-9050 1-800-752-5151
24 Hour Emergency Telephone Number:	1-800-733-3665 or 1-972-404-3228 (USA); CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	LIQUID SODIUM SILICATE - ALKALINE
Trade Name:	Sodium Silicate Liquid Alkaline, Grades 2.2, 2.2 Special, 30 Clear, 47, 47 Light, 47 Special, 49FG, 49FG Special, 50, 50 Clear, 50 Light, 50 Special, 50 Special Clear, 52, 52 Special, JW-25, JW Clear, Pilot Special, WD-43, WD-43 Heavy, WD-43 Special; Moroc 1
Synonyms:	Liquid sodium silicate, Water glass, Sodium silicate liquid alkaline
Product Use:	adhesives and binders, pulp and paper, deinking, detergents / soaps, catalysts, textiles, drilling fluids, mineral processing, refractory cements, zeolites
Uses Advised Against:	Neutralizing acidic wastewater.

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2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

EMERGENCY OVERVIEW:

Color: Colorless to slight tint
Physical state: Liquid
Appearance: Clear to opaque
Odor: Odorless to slight odor

Signal Word: **DANGER**

MAJOR HEALTH HAZARDS: CORROSIVE. CAUSES SERIOUS EYE DAMAGE. CAUSES SKIN IRRITATION. HARMFUL IF SWALLOWED.

PHYSICAL HAZARDS: Upon drying forms thin glass that can cut skin. Spilled material may cause a slipping hazard.

PRECAUTIONARY STATEMENTS: Wear protective gloves, protective clothing, eye, and face protection. Wash thoroughly after handling. Do not breathe mist, vapors, or spray. Do not eat, drink, or smoke when using this product.

ADDITIONAL HAZARD INFORMATION: Toxicity may be delayed, and may not be readily visible. Significant exposures must be referred for medical attention immediately. There is no specific antidote.

GHS CLASSIFICATION:

GHS: CONTACT HAZARD - SKIN:	Category 2 - Causes skin irritation.
GHS: CONTACT HAZARD - EYE:	Category 1 - Causes serious eye damage
GHS: ACUTE TOXICITY - INHALATION:	No data available Not classified
GHS: ACUTE TOXICITY - ORAL:	Category 4 - Harmful if swallowed.
GHS: ACUTE TOXICITY - DERMAL:	Not classified as acutely toxic for dermal exposure.
GHS: CARCINOGENICITY:	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.

UNKNOWN ACUTE TOXICITY:

Not applicable. This product was tested as a whole. This information only pertains to untested mixtures.

GHS SYMBOL:

Corrosive, Exclamation mark

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GHS SIGNAL WORD: DANGER

GHS HAZARD STATEMENTS:

GHS - Health Hazard Statement(s)

Causes serious eye damage
Causes skin irritation
Harmful if swallowed

GHS - Precautionary Statement(s) - Prevention

Wear eye protection/face protection
Wear protective gloves
Wash thoroughly after handling
Do not eat, drink or smoke when using this product

GHS - Precautionary Statement(s) - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN: Wash with plenty of water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Specific treatment (see First Aid information on product label and/or Section 4 of the SDS)

GHS - Precautionary Statement(s) - Storage

There are no Precautionary-Storage phrases assigned

GHS - Precautionary Statement(s) - Disposal

Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

Hazards Not Otherwise Classified (HNOC)

None identified

See Section 11: TOXICOLOGICAL INFORMATION

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Liquid sodium silicate, Water glass, Sodium silicate liquid alkaline

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Component	Percent [%]	CAS Number
Water	45 - 85	7732-18-5
Sodium silicate	15 - 55	1344-09-8

4. FIRST AID MEASURES

INHALATION: If inhalation of this material occurs and adverse effects result, move person to fresh air and keep comfortable for breathing. Call a Poison Center or seek medical attention if you feel unwell.

SKIN CONTACT: If on skin, wash with plenty of water. If skin irritation occurs, get medical advice/attention.
SPECIFIC TREATMENT: Wash with lots of water. Take off contaminated clothing and wash before reuse.

EYE CONTACT: If in eyes, immediately rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

INGESTION: If swallowed, rinse mouth. Contact a Poison Center, or a doctor/physician, or get medical attention if you feel unwell.

Most Important Symptoms/Effects (Acute and Delayed) Solutions of sodium silicate are alkaline. Exposure to alkaline solutions may result in irritation to any contacted tissue, including possible burns, depending on the concentration, duration, and nature of the exposure. This material is not a crystalline silica, and it does not cause pulmonary silicosis.

Acute Symptoms/Effects: Listed below.

Inhalation (Breathing): Respiratory System Effects: Inhalation exposure may cause irritation, redness of upper and lower airways, coughing, laryngeospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure.

Skin: Skin Irritation. Skin exposure may cause irritation, redness, itching, swelling, burning sensation.

Eye: Serious Eye Damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye. The full extent of the injury may not be immediately apparent.

Ingestion (Swallowing): Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

Delayed Symptoms/Effects:

- Repeated and prolonged skin contact may cause a dermatitis

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Medical Conditions Aggravated by Exposure: May aggravate preexisting conditions such as: Eye disorders that decrease tear production or have reduced integrity. Skin disorders that compromise the integrity of the skin such as: psoriasis, rashes, eczema, skin infections. Pulmonary disorders that compromise the integrity of the lungs such as asthma.

Protection of First-Aiders: Avoid contact with skin and eyes. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

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Notes to Physician: Treat as a corrosive substance. Treat symptoms with supportive care. There is no specific antidote. The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage. It may take 48-72 hours to assess the extent of an ocular burn. Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard.

Extinguishing Media: Use media appropriate for surrounding fire.

Fire Fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable

Upper Flammability Level (air): Not flammable

Flash point: Not flammable

Auto-ignition Temperature: Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Do not get in eyes, on skin or on clothing. Avoid breathing mist, vapor, or spray. Dries to form glass film which can easily cut skin. Spilled material may cause a slipping hazard. Wear appropriate personal protective equipment recommended in Section 8, Exposure Controls / Personal Protection, of the SDS.

Methods and Materials for Containment and Cleaning Up:

Flush spill area with water, if appropriate. Liquid material may be removed with a vacuum truck. Shovel dried residue into suitable container. Recycle or dispose according to regulations. See Section 13, Disposal considerations, for additional information.

Environmental Precautions:

This material is alkaline and may raise the pH of surface waters with low buffering capacity. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

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7. HANDLING AND STORAGE

Precautions for Safe Handling:

Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Avoid breathing vapor, mist, or spray. Product shipped/handled hot can cause thermal burns. Use care when handling hot material. Do not eat, drink or smoke in areas where this material is used. Use appropriate personal protective equipment (PPE). See Section 8, Exposure Controls and Personal Protection, for additional information.

Safe Storage Conditions:

Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatibilities/ Materials to Avoid:

Can generate heat when mixed with acids, Avoid prolonged contact with alkali sensitive metals such as: aluminum, brass, bronze, copper, lead, tin, zinc because flammable hydrogen gas can be generated

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure Limit(s): None. This product does not contain any components that have regulatory occupational exposure limits (OEL's) established.

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

NON-REGULATORY EXPOSURE LIMIT(S): Listed below for the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

- *The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).*

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

OXY REL 8 hr TWA	2 mg/m ³ recommended Time Weighted Average - 8 hour (internal Occupational Exposure Limit)
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ENGINEERING CONTROLS: Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

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PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear safety glasses with side-shields. If eye contact is likely, wear chemical resistant safety goggles. Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear protective clothing to minimize skin contact. When skin contact is likely, wear Tychem® SL or a similar protective suit. Wear appropriate heat resistant clothing when potential exists for contact with hot materials.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove. Use gloves that are cut resistant if handling dry glass material.

Protective Material Types: Butyl rubber, Natural rubber, Neoprene, Nitrile, Tychem® SL, Tyvek®

Respiratory Protection: A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Appearance:	Clear to opaque
Color:	Colorless to slight tint
Odor:	Odorless to slight odor
Odor Threshold [ppm]:	No data available.
Molecular Formula:	$x\text{SiO}_2/\text{Na}_2\text{O}$ ($x = 1.63$ to 3.00 by weight)
Decomposition Temperature:	No data available
Boiling Point/Range:	214-216 °F (101-102 °C)
Freezing Point/Range:	30 °F (-1 °C).
Melting Point/Range:	Not applicable to liquids
Vapor Pressure:	No data available
Vapor Density (air=1):	No data available
Relative Density/Specific Gravity (water=1):	1.17 - 1.57
Density:	9.8 - 13.1 lbs/gal
Water Solubility:	100%
pH:	11.4 - 12.9
Volatility:	>46%
Evaporation Rate (ether=1):	No data available
Partition Coefficient (n-octanol/water):	No data available
Flash point:	Not flammable
Flammability (solid, gas):	Not applicable
Lower Flammability Level (air):	Not flammable
Upper Flammability Level (air):	Not flammable

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Auto-ignition Temperature: Not applicable
Viscosity: 25 - 2500 cP

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal temperatures and pressures.

Chemical Stability: Stable at normal temperatures and pressures.

Possibility of Hazardous Reactions:

Contact with acids will cause gelling and evolution of heat. Prolonged contact with incompatible metals may produce flammable hydrogen gas.

Conditions to Avoid:

(e.g., static discharge, shock, or vibration) -. Prolonged storage above 140 °F (60 °C).

Incompatibilities/ Materials to Avoid:

Can generate heat when mixed with acids. Avoid prolonged contact with alkali sensitive metals such as: aluminum, brass, bronze, copper, lead, tin, zinc because flammable hydrogen gas can be generated.

Hazardous Decomposition Products: None known

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

IRRITATION DATA: As listed below

Standard Draize (Eye): Test results for solutions with the following pH/weight ratio of SiO₂/Na₂O are as follows:
 11.6/2.54 = irritant; 11.6/2.4 = irritant; 12.2/2.0 = corrosive; 12.4/1.8 = corrosive

TOXICITY DATA:**PRODUCT TOXICITY DATA:** LIQUID SODIUM SILICATE - ALKALINE

LD50 Oral: 1153 mg/kg (Rat)	LD50 Dermal: 4640 mg/kg (Rabbit)	LC50 Inhalation: No data is available
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COMPONENT TOXICITY DATA:

Note: The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Sodium silicate 1344-09-8	1153 mg/kg (Rat)	-----	-----

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POTENTIAL HEALTH EFFECTS:

- Eye contact:** Causes serious eye damage. May cause severe irritation, pain and corneal burns (possibly leading to blindness). The full extent of the injury may not be immediately apparent.
- Skin contact:** Causes skin irritation. Contact with skin may result in redness, itching, irritation, burning sensation, swelling.
- Inhalation:** Inhalation of mist, vapor, or spray may cause irritation of the respiratory tract, possibly with coughing, choking, and pain either immediately or within 72 hours.
- Ingestion:** Harmful if swallowed. May cause immediate pain and severe burns of the upper and lower gastrointestinal tract with vomiting, nausea, and diarrhea.
- Chronic Effects:** Repeated or prolonged skin contact may result in dermatitis.

SIGNS AND SYMPTOMS OF EXPOSURE:

Solutions of sodium silicate are alkaline. Exposure to alkaline solutions may result in irritation to any contacted tissue, including possible burns, depending on the concentration, duration, and nature of the exposure. This material is not a crystalline silica, and it does not cause pulmonary silicosis.

- Inhalation (Breathing):** Respiratory System Effects: Inhalation exposure may cause irritation, redness of upper and lower airways, coughing, laryngeospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure.
- Skin:** Skin Irritation. Skin exposure may cause irritation, redness, itching, swelling, burning sensation.
- Eye:** Serious Eye Damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal contents of the eye. The full extent of the injury may not be immediately apparent.
- Ingestion (Swallowing):** Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

Interaction with Other Chemicals Which Enhance Toxicity: None known.

GHS HEALTH HAZARDS:

Listed below.

GHS: ACUTE TOXICITY - ORAL: Category 4 - Harmful if swallowed.

GHS: ACUTE TOXICITY - DERMAL: Not classified as acutely toxic for dermal exposure.

GHS: ACUTE TOXICITY - INHALATION: No data available. Not classified.

Skin Absorbent / Dermal Route? No.

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GHS: CONTACT HAZARD - SKIN: Category 2 - Causes skin irritation

GHS: CONTACT HAZARD - EYE: Category 1 - Causes serious eye damage

GHS: CARCINOGENICITY:

Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Aquatic Toxicity:

This material has exhibited moderate toxicity to aquatic organisms.

FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

PERSISTENCE: This material is believed to persist in the environment.

BIOCONCENTRATION: This material is not expected to bioconcentrate in organisms.

ADDITIONAL ECOLOGICAL INFORMATION: This material has exhibited slight toxicity to terrestrial organisms.

13. DISPOSAL CONSIDERATIONS

Waste from material:

Reuse or recycle if possible. May be subject to disposal regulations. Dispose in accordance with all applicable regulations.

Container Management:

Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT

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U.S. DOT 49 CFR 172.101:

Status: Not regulated

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

Status: Not regulated.

MARITIME TRANSPORT (IMO / IMDG) Not regulated

Status - IMO / IMDG: Not Regulated

15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

Not regulated.

SARA EHS Chemical (40 CFR 355.30)

Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

Acute Health Hazard

EPCRA SECTION 313 (40 CFR 372.65):

Not regulated.

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):

Not regulated

FDA: Sodium Silicates have Generally Recognized as Safe (GRAS) status under specific FDA regulations. Refer to 21 Code of Federal Regulations (CFR) 173, 175, 176, 177, 182, and 184, which is accessible on the FDA's website. This product is not produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the Food and Drug Administration (FDA).

NATIONAL INVENTORY STATUS

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U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt.

TSCA 12(b): This product is not subject to export notification.

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

California Proposition 65:

This product and its ingredients are not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact OxyChem Customer Relations.

CANADIAN REGULATIONS

• This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations

WHMIS - Classifications of Substances:

• E - Corrosive material

16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Rev. Date: 18-Mar-2015

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health Rating: 3

Flammability Rating: 0

Reactivity Rating: 0

NFPA 704 - Hazard Identification Ratings (SCALE 0-4)

Health Rating: 3

Flammability: 0

Reactivity Rating: 0

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Reason for Revision:

- Three year review
- Changed the SDS format to meet the GHS requirements of the revised 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Updated the (M)SDS header
- Updated 24 Hour Emergency Telephone Number: SEE SECTION 1
- Product Identifier has been added or updated: SEE SECTION 1
- Updated Uses Advised Against information: SEE SECTION 1
- Revised Hazard(s) Identification information: SEE SECTION 2
- Added OSHA Status: SEE SECTION 2
- Emergency Overview was revised: SEE SECTION 2
- Added GHS Information: SEE SECTION 2
- Modified Composition/Information on Ingredients: SEE SECTION 3
- Updated First Aid Measures: SEE SECTION 4
- Modified Fire Fighting Measure Recommendations: SEE SECTION 5
- Revised Accidental Release Measures: SEE SECTION 6
- Revised Handling and Storage Recommendations: SEE SECTION 7
- PPE recommendations have been modified: SEE SECTION 8
- Updated Physical and Chemical Properties. SEE SECTION 9
- Stability and Reactivity recommendations: SEE SECTION 10
- Toxicological Information has been revised: SEE SECTION 11
- Updated Disposal Considerations. SEE SECTION 13
- Added SDS Revision Date: SEE SECTION 16

IMPORTANT:

The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and OxyChem assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees

End of Safety Data Sheet